READ THIS FIRST!

PRODUCT INFORMATION

Z89371 ICEBOX™ EMULATOR

QUICK START

1 Check Support Package Contents

(See Other Side)

2 Load Software

Select the "Run" command from the "File" menu, located under Microsoft Windows "Program Manager".

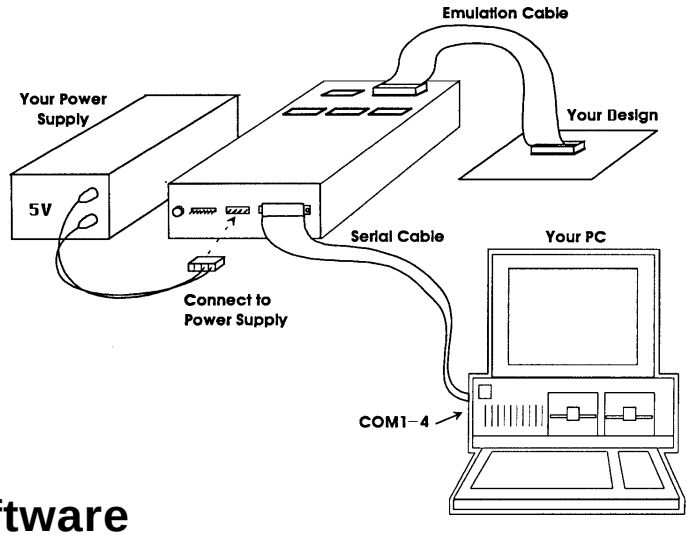
a. Insert disk labeled "DSP GUI" in drive A (or drive B, if appropriate.)
b. Type "a:\setup" and press ENTER. (Type "b:\setup" if drive B is used.)
c. Follow on-screen instructions.
d. Remove diskette and store in a safe place when done.

3 Make Connections

Power Supply, PC, and Your Design

Refer to Z89371 ICEBOX Emulator User's Manual

Observe Electrical Safeguards
(See Z89371 ICEBOX Emulator User's Manual)



4 Run Zilog ICEBOX GUI Software

1. Double click the DSP-ICE icon.
2. Select the microcontroller and ROM size in the Configuration Dialog Box.
3. Use the "File" menu to download sample files to DSP Code Memory.
4. Refer to Z89371 ICEBOX Emulator User's Manual, "Chapter 3: Emulator Sample Session".

SUPPORT PRODUCTS PACKAGE CONTENTS

The Zilog Z89371 ICEBOX Emulator Support Products Package contains the following items:

Hardware
Z89371 ICEBOX Emulator
Power Cable with Banana Plugs
DB25 RS-232 Cable
44-Pin PLCC Emulation Cable
40-Pin DIP Pod

Software
DSP GUI

Publications
Zilog Z89371 ICEBOX Emulator User's Manual
Registration Card
Product Information

Supported Devices

Packages	Emulation	Programming
40-Pin DIP	Z89321/371	Z89371
44-Pin PLCC	Z89321/371	Z89371
44-Pin QFP	N/A	Z89371*
84-Pin PLCC	N/A	N/A

Note: * With optional separately purchased adapter, Z8937100ZDF.

LIMITATIONS

1. Download Progress. The GUI code download status is not reflected correctly by the color bar download progress indicator.

2. Changing the drives in file download and load symbol dialog boxes is not anticipated by the GUI. Typing in the filename in directory other than shown in “Path:” will result in “File not found”. Changing the drive using the mouse is the workaround.

3. The GUI does not recognize the PUSH and POP instructions when entered from In-Line Assembler. Use “LD STACK, xxx” for PUSH and “LD xxx, STACK” for POP instead.

4. The initial blue Zilog screen will be distorted by other active windows. This only affects the appearance, not functionality, of the GUI.

5. Switching ICEBOXes without quitting the GUI is not supported.

6. The maximum symbols that can be loaded is 32768, provided that there is enough system resource (memory).

7. The ICEBOX breakpoint hardware does not distinguish between instruction and data fetches. Thus when a breakpoint is set in the GUI, the breakpoint hardware triggers when the addresses match for either code or data fetches.

   Example:

```
0000    LD    A, #%0006
0002    ADD   A, #%0002
0003    LD    Y, @A
0004    NOP
0005    NOP
0006    JP    %0000
0008    NOP
```

   Setting the breakpoint at %0008 and click GO.

   Result: The code will break and stop at %0004.

   Note: This will not happen when Animate Mode is on because the GUI is not using the hardware breakpoints when in Animate Mode.

PRECAUTIONS

1. HALT/Interrupt. There is a danger that Code memory will be modified if the GUI is stopped (either by halting or by setting a breakpoint) when interrupts are active. As a result: a. The user cannot restart the code without re-downloading it; b. Although the code breaks at the correctly set breakpoint, the GUI sometimes shows code breaking at the Interrupt Service Routine (ISR) entry point; c. All other GUI windows are updated correctly except for Debug and Code windows.

   Workaround: Set breakpoints only within the ISRs.

2. In 8-bit Mode, CODEC interface 0 and 1 must both be enabled for CODEC interface 1 to work properly.

3. UO0, UO1 are both Open Drain.

4. Pod Hazard. The user must exercise care to ensure that the emulation pod is correctly aligned (pin-1 to pin-1) before inserting into the target system. An incorrectly aligned pod inserted into a target system may damage the emulator and/or the target system. The colored edge of the target cable denotes pin 1 and the connectors are keyed to only plug-in one way. Each emulation pod is marked with a "1" and/or a "triangle" to denote pin 1.

5. Breakpoint Overshoot. The Disassembly window shows the processor halting at one or two instructions past the instruction where the breakpoint was set.

PRECAUTIONS (Continued)

6. Cannot Start Emulator with OTP in Socket. The emulator does not start correctly if an attempt is made to start the emulator with a part in the socket.

7. A Shorted PLCC or DIP OTP Can Crash the Emulator. If a PLCC part is inserted in such a way as to cause a temporary short, then functionality is lost. An attempt to perform BLANK CHECK on such a part will cause the "Sand Glass" to appear continuously; it is necessary to reset windows and restart.

8. Downloaded File Name Not Shown except at Time of Download. The Z89371 emulator only shows the name of the file during the download process. To check the name of the file currently downloaded, select "File" and then "Download DSP Memory." The File Name box in the "Down To DSP Code Memory" window will reflect the file that is selected for download. Unlike our other emulators, the Debug window or Memory window does not show the name of the currently downloaded file.

9. Disabling Peripherals Allows Use of EXT0-6. There is no internal register access for EXT4, 5, 6 except as used for their intended purposes, such as counter, and CODEC interface. EXT7 is essentially off limits as it is the CODEC interface control register.

10 Executing GUI. The GUI will occasionally continue to indicate Executing after it has been told to halt. Pushing the GO button will then result in Executing. (Executing showing at the top of the screen.)

11. Programming 44-PLCC Parts. If programming 44-PLCC parts, ensure Pin 1 orientation.

12. The ICEBOX™ is designed to program the Z89371 OTP devices with date code 9445 or later.

13. To reliably program the Z89371 OTP devices with date code 9445 or later, ensure the ICEBOX has the latest hardware revision (any ICEBOX purchased or repaired after March, 1995 or ICEBOX serial number with the last three digits that are 088 or higher).

14. The emulator cannot be operated while performing ESD/EMI testing on the target board.

15. GUI software versions prior to 3.00 are incompatible with hardware containing BOOTROM 3.00. The GUI software may still boot, but will fail at some later point of the session.

16. The status color bar in OTP dialog box will be cleared in the area where a new window opens on top of it.

17. The PLC Z89C00 Assembler RESET symbol in symbol table is fixed at 1000 when the assembly code contains “VECTOR RESET =” statement.

18. For 386 PCs, set the baud rate to 19.2K or less because the Windows’ communication driver does not guarantee “reliable” operation at more than 9600 baud. Selecting a high baud rate on some slower 386 machines may crash the Windows environment.

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